

ABSTRACT

Method of ultrasound intrusion detection is disclosed wherein the ultrasound multi-area volumetric surveillance is being organized to meet properly the correspondent requirements for the defense-in-depth protection of critical objects. All the room around a protected object is being purposely arranged in juxtaposed volumetric areas, which areas are closed or open and do represent respectively the central, short-range and long-range echelons of an entire defense-in-depth protection space. The pertain method of ultrasound detection of either ingress or aggress hazardous intrusion is being realized in each adjacent echelon regarding the specific task, which this very echelon has been commissioned with. These methods are being based preferably upon the reflection, refraction and interference of narrowly directed ultrasound beams, which beams are being closely disposed in 2-D curvilinear array or 3-D curved surface arrangement and activated for target detection with use of either stationary vector directing or scan conversion techniques. Processing and displaying of self-checking, caution and alarm signals are being accomplished on the basis of logical programming and with the same kind of hardware and software for each method of ultrasound detection involved that shall enhance the reliability, trustworthiness and cost-effectiveness of ultrasound detection of ingress or aggress intrusion throughout the adjacent volumetric protection areas of critical objects.

7 Claims, 2 Drawing Sheets